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EXAMINER				
NGUYEN, HANH N				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/586,239

**Applicant(s)**

SHIKAYAMA ET AL.

**Examiner**

HANH N. NGUYEN

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 7/17/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### *Drawings*

1. Figures 5 and 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Takedomi (US 5,087,844).

Regarding claim 1, AAPA discloses in Figs. 5 and 6 and pages 2 and 3 of the present invention a coreless linear motor comprising: a magnetic field system that includes a plurality of permanent magnets (201b) arranged in line, polarities of the adjacent permanent magnets being different from each other; and armatures that are disposed to face the rows of the permanent magnets through a magnetic gap and have

coreless-type armature coils (102b and 103b) formed of a plurality of coil groups arranged, wherein when one of the magnetic field system and the armatures serves as a stator and the other serves as a movable member, the magnetic field system and the armatures relatively move, the magnetic field system is constructed so that two magnet rows of permanent magnets face each other (Fig. 6 of the present invention), the armatures are disposed so that two rows of armature coils are arranged between the two rows of magnets in the magnetic field system, the armature coils and the substrate are fixed by mold resin, and the permanent magnet takes the profile of the armature. AAPA fails to show at least one end of the two rows of armature coils in the direction perpendicular to the direction of a magnetic gap between the rows of magnet branches into two parts and a substrate for connecting the coils is inserted into the gap between the branching parts.

However, Takedomi discloses a linear motor wherein at least one end of the two rows of armature coils (19a, 19b in Figs. 1 and 2) in the direction perpendicular to the direction of a magnetic gap between the rows of magnet branches into two parts and a substrate (18) for connecting the coils is inserted into the gap between the branching parts for the purpose of reducing torque ripple (Col. 3, lines 5-10).

Since AAPA and Takedomi are in the same field of endeavor, the purpose disclosed by Takedomi would have been recognized in the pertinent art of AAPA.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify AAPA by making at least one end of the two rows of armature coils in the direction perpendicular to the direction of a magnetic gap

between the rows of magnet branches into two parts and a substrate for connecting the coils is inserted into the gap between the branching parts as taught by Takedomi for the purpose of reducing torque ripple.

Regarding claim 2, AAPA also discloses wherein the substrate is formed by applying an insulating film and a copper-foil pattern on a plate (page 3 of the specification) and it would have been obvious at the time the invention was made to a person having an ordinary skill in the art to use aluminum for the plate, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shikayama (US 6,731,029) in view of Takedomi (US 5,087,844).

Regarding claim 3, Shikayama discloses a scanned linear motor comprising: a magnetic field system that includes a plurality of permanent magnets (23 in Fig. 1a) arranged in line, polarities of the adjacent permanent magnets being different from each other; armatures that are disposed to face the rows of the permanent magnets through a magnetic gap and have coreless-type armature coils (13, 14) formed of a plurality of coil groups arranged; a can (14 as described in Col. 5, lines 60-65) that seals the armature coils; and a refrigerant path that flows a refrigerant between the armature coils and the can (Col. 6, lines 10-20), wherein the magnetic field system is constructed so that two magnet rows of permanent magnets face each other (Fig. 1a), the armatures are disposed so that two rows of armature coils are arranged between the two rows of

magnets in composing the magnetic field, the armature coils and the substrate are fixed by mold resin (the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight), and the permanent magnet takes the profile of the armature. Shikayama fails to show at least one end of the two rows of armature coils in the direction perpendicular to the direction of a magnetic gap between the rows of magnet branches into two parts and a substrate for connecting the coils is inserted into the gap between the branching parts.

However, Takedomi discloses a linear motor wherein at least one end of the two rows of armature coils (19a, 19b in Figs. 1 and 2) in the direction perpendicular to the direction of a magnetic gap between the rows of magnet branches into two parts and a substrate (18) for connecting the coils is inserted into the gap between the branching parts for the purpose of reducing torque ripple (Col. 3, lines 5-10).

Since Shikayama and Takedomi are in the same field of endeavor, the purpose disclosed by Takedomi would have been recognized in the pertinent art of Shikayama.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Shikayama by making at least one end of the two rows of armature coils in the direction perpendicular to the direction of a magnetic gap between the rows of magnet branches into two parts and a substrate for connecting the coils is inserted into the gap between the branching parts as taught by Takedomi for the purpose of reducing torque ripple.

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4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shikayama in view of Takedomi and further in view of AAPA.

It is noted that all limitation of the claimed invention as recited in claim 4 is fulfilled by Shikayama, Takedomi and AAPA (please refer to the rejection of claim 2).

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (571) 272-2031. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg, can be reached on (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1000.

HNN

June 7, 2008

/Nguyen N Hanh/

Examiner, Art Unit 2834

